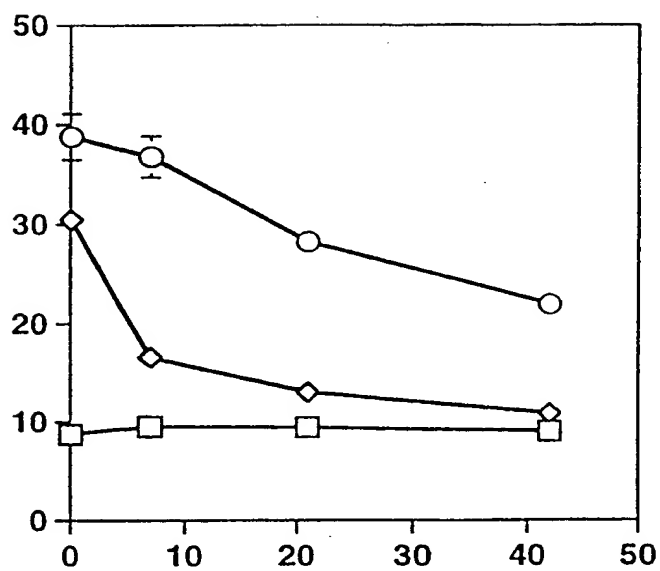


Figure 1



A

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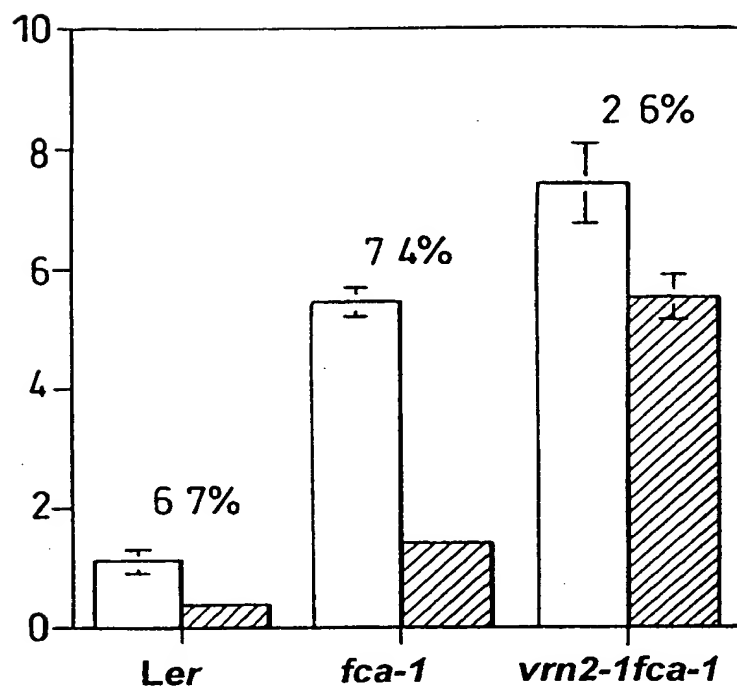
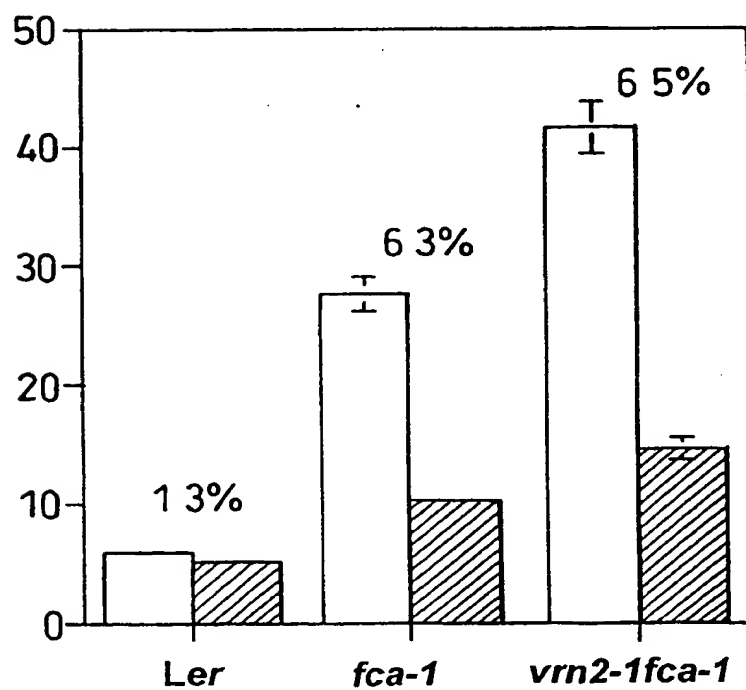
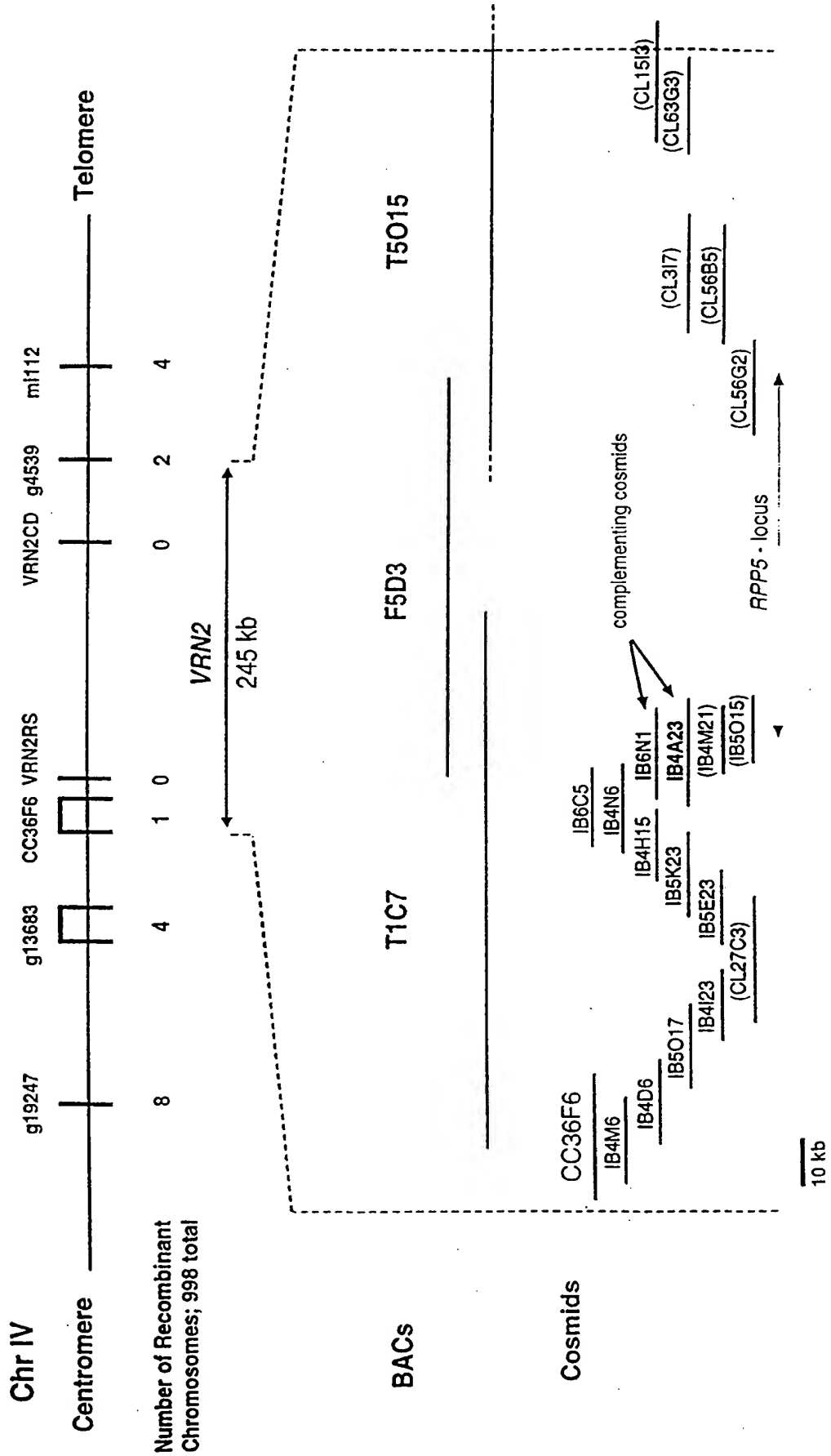
*B**Fig. 2*

Figure 3



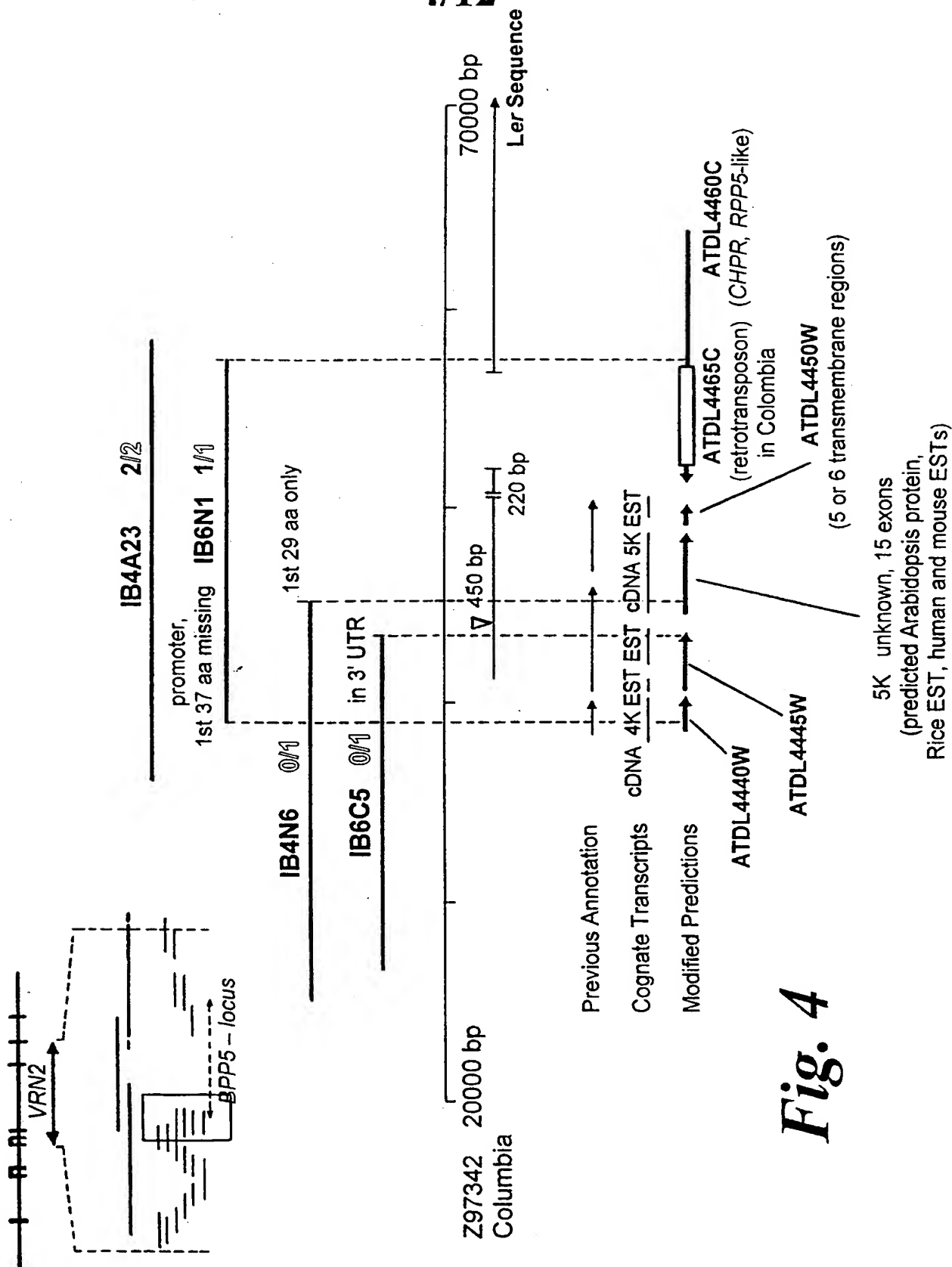
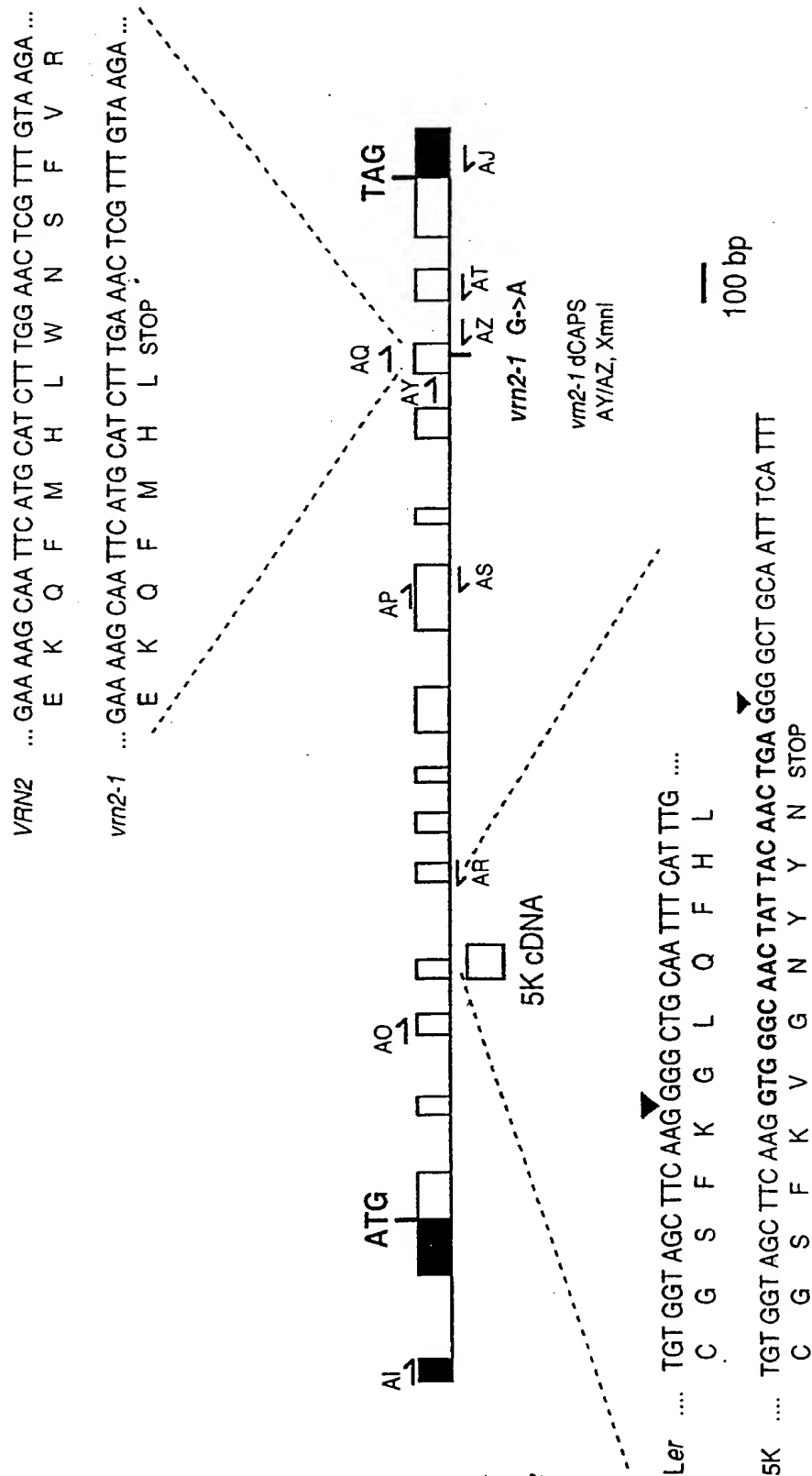


Fig. 4

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Figure 5



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TTCTTCAATTTTGCTTGCTCTCTCTTACACAGCCAAATCGGTGTTTTCGCAGCTTTCAGGCCTCAATCCAAGACAT	5
TCTATATAAGCATATTGCAGAAGAGGCGGTTCTAATTGTTGCATTGAGTTTATCGCTATGACGTAGGGAAATCT	80
AATTTAGGGGAGGCCTCAGAGTTTGCACCTAATTCATAATCGGCTCTTGACGTTGTTGAGTGAATTGAACAAGA	155
ATGTGTAGGCAGAATTGTGCGCGGAAATCCTCACCAGGAGGAAGTGATTTCAACTGATGAGAATCTCTTGATATAT	230
M C R Q N C R A K S S P E E V I S T D E N L L I Y	305
TGTAACCTGTTCGACTATATAACATCTTTCACCTTCGCTCTCTAGGCAACCCATCGTTTCTTCCAAGATGCTTG	25
C K P V R L Y N I F H L R S L G N P S F L P R C L	380
AACTACAAAATTGGAGCAAAGCGCAAAGAAAGTCAAGATCTACTGGGATGGTAGTTTTCAACTATAAGGATTGT	50
N Y K I G A <u>K R K R K</u> S R S T G M V V F N Y K D C	455
AATAACACATTACAGAAAACCTGAAGTTAGGAGGATTGTTCTTGTCCATTTTGTCTATGCTATGTGGTAGCTTC	75
N N T L Q K T E V R E D C S <u>C P F C S M L C G S F</u>	530
AAGGGCTGCAATTTCAATTGAAATTCATCTCATGATTTATTTGAATTTGAGTTCAAGCTTTTTCGAAGAATACCAG	100
<u>K G L Q F H L N S S H</u> D L F E F E F K L F E E Y Q	605
ACAGTTAATGTTTCTGTAAACCTTAATTCCTTCATATTTGAGGAAGAAGGAAGTGATGACGATAAATTTGAGCCC	125
T V N V S V K L N S F I F E E E G S D D D K F E P	680
TTCTCTCTCTGCTCGAAACCTCGTAAGCGGAGACAAAGAGGTGGCAGAAATAACACCAGGAGACTTAAAGTATGC	150
F S L C S K P <u>R K</u> R R Q R G G R N N T <u>R R L K V</u> C	755
TTTTTACCGTTGGATTACCCAGTTTAACCTAATGGCACAGAAAATGGAATCACCCCTACTTAATGATGGAAACCGT	175
F L P L D S P S L T N G T E N G I T L L N D G N R	830
GGTTTAGGATATCCCGAGGCAACAGAGCTTGTGACAAATTTGAGATGACCAGCAACATTCCACCAGCCATAGCC	200
G L G Y P E A T E L A G Q F E M T S N I P P A I A	905
CACTCTTCTCTGGACGCTGGTGCTAAAGTTATATTGACAAGCGAAGCTGTGGTCCCTGCTACTAAGACAAGAAAG	225
H S S L D A G A K V I L T S E A V V P A T K T R K	980
TTATCTGCTGAGCGATCAGAGGCTAGAAGCCACCTACTTCTTCAGAAAACGCCAATTCATCATCTTCACAGAGTC	250
L S A E R S E A R S H L L L Q K R Q F Y H S H R V	1055
CAGCCAATGGCGCTTGAGCAAGTAATGTCTGACCGGATAGCGAGGATGAAGTCGATGACGATGTTGCAGATTTT	275
Q P M A L <u>E Q V M S D R D S E D E V D D D V A D F</u>	1130
GAAGATCGCCAGATGCTTGATGACTTTGTGGATGTGAATAAAGATGAAAAGCAATTCATGCATCTTTGGAACCTCG	300
E D R Q M L D D F V D V N K D E K Q F M H L <u>(W)</u> N S	1205
TTTGTAAGAAAACAAAGGTTATAGCAGATGGTCATATCTCTTGGGCATGTGAAGCATTTTCAAGATTTTACGAG	325
F V R K Q R V I A D G H I S W A C E A F S R F Y E	1280
AAAGAGTTGCACCGTTACTCATCACTCTTCTGGTGTGGAGATTGTTTTTGATTAAACTATGGAACCATGGACTT	350
K E L H R Y S S L F W C W R L F L I K L W N H G L	1355
GTCGACTCAGCCACCATCAACAACCTGCAATACCATCTCGAGAATTGCCGTAATAGCTCAGACACCACCACCACC	375
V D S A T I N N C N T I L E N C R N S S D T T T T	1430
AACAACAACAACAGTGTGGATCGTCCAGTGACTCAAACACCAACAACAATAACATTGTGGATCATCCCAATGAC	400
N N N N S V D R P S D S N T N N N N I V D H P N D	1505
ATAAACAACAAGAACAATGTTGACAACAAGGACAATAACAGCAGAGACAAAGTAATTAATAGGAAAATCTCCGG	425
I N N K N N V D N K D N N S R D K V I K	1580
CTTTTATGATACCGATTTATCGGATTGTAACCTATTCTTCTTTCTTAAAAAATGTTTAGGAGCAAACAATTTT	445
TTATATGTTAGTGTATTCAACTGATTACATTTTTAGTTAAAAAATAATGGATTCTGCTTATAACT	1655
	1722

Figure 6

SUBSTITUTE SHEET (RULE 26)

T T T T T = 0 2 2 0 2 2 0

Figure 7

fca-1 W323
vrn2-1 GAAAAGCAATTTCATGCATCTT TGG AACTCGTTTGTAAAGAA
TGA
STOP

GAAAAGCAATTTCATGCATCTTTTGAAACTCGTTTGTAAAGAA
CTTNNNNAAG
XmnI site

Diagnostic Primer: VRN2-AZ Antisense 3' TGAGAAAGACATCTTTTGTTCATTCATGAAGAG 5'
(contains a A and G mismatches at positions 5,7) (CTT)NNNNAAG
XmnI half-site

Upstream Primer: VRN2-AY 5' TGC GTTCATTAAAGTAGGCAACAGAAAATGG 3'

Product: 170 bp PCR product for both *fca-1* and *vrn2-1*

PCR Products:

fca-1 GAAAAGCAATTTCATGCATCTTTTGGAACCTCTTCTGTAAAGAA
vrn2-1 GAAAAGCAATTTCATGCATCTTTGAAACTCTTCTGTAAAGAA

XmnI digest => *fca-1* no XmnI site 170 bp
vrn2-1 single XmnI site 137 bp, 33 bp fragments

Figure 8a

VRN2 Ler	M	C	R	Q	N	C	R	A	K	S	S	P	E	E	V	I	S	T	D	E	20
Al163743 Prot	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Rice C72616	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	I	.	.	.	.	A	K	P	L	A	T	R	N	S	E	S	L	H	Q	E	452
VRN2 Ler	N	L	L	I	Y	C	K	P	V	R	L	Y	N	I	F	H	L	R	S	L	40
Al163743 Prot	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Rice C72616	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	N	K	P	G	S	V	K	P	T	Q	.	.	.	.	.	.	.	.	T	I	464
VRN2 Ler	G	N	P	S	F	L	P	R	C	L	N	Y	K	I	G	A	K	R	K	R	60
Al163743 Prot	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Rice C72616	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	A	V	K	E	S	L	T	T	D	L	Q	T	R	K	E	K	D	T	P	N	484
VRN2 Ler	K	S	R	S	T	G	M	V	V	F	N	Y	K	D	C	N	N	T	L	Q	80
Al163743 Prot	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Rice C72616	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	E	N	R	Q	K	L	R	I	F	Y	Q	F	L	Y	N	N	N	T	R	Q	504
VRN2 Ler	K	T	E	V	R	E	D	C	S	C	P	F	C	S	M	L	C	G	S	F	100
Al163743 Prot	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Rice C72616	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	Q	T	E	A	R	D	D	L	H	C	P	W	C	T	L	N	C	R	K	L	524
VRN2 Ler	K	G	L	Q	F	H	L	N	S	S	H	D	L	F	E	F	E	F	K	L	120
Al163743 Prot	1
Rice C72616	1
At Hyp 2245035	1
KIA00160	Y	S	L	L	K	H	L	K	L	C	H	S	R	F	I	F	N	Y	V	Y	544

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Figure 8a continued

VRN2 Ler	F	E	E	Y	Q	T	V	N	V	S	V	K	L	N	S	F	I	F	E	E	140
Al163743 Prot	1
Rice C72616	1
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	H	P	K	G	A	R	I	D	V	S	I	N	.	.	.	.	.	.	.	.	557
VRN2 Ler	E	G	S	D	D	D	K	F	E	P	F	S	L	C	S	K	P	R	K	R	160
Al163743 Prot	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Rice C72616	.	.	.	.	.	.	.	.	.	.	T	F	S	Y	R	S	R	F	K	K	10
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	557
VRN2 Ler	R	Q	R	G	G	R	N	N	T	R	R	L	K	V	C	F	L	P	L	D	180
Al163743 Prot	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Rice C72616	R	K	R	V	E	I	S	S	D	K	I	R	H	V	H	P	H	I	V	D	30
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	557
VRN2 Ler	S	P	S	L	T	N	G	T	E	N	G	I	T	L	L	N	D	G	N	R	200
Al163743 Prot	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Rice C72616	S	G	S	P	E	D	A	Q	A	G	S	E	D	D	Y	V	Q	R	E	N	50
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	E	C	Y	D	560
VRN2 Ler	G	L	G	Y	P	E	A	T	E	L	A	G	Q	Q	F	E	M	T	S	N	220
Al163743 Prot	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	17
Rice C72616	G	H	A	Y	P	D	A	A	E	.	C	A	Q	Q	L	V	P	G	N	N	70
At Hyp 2245035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
KIA00160	G	S	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	580
VRN2 Ler	P	A	P	240
Al163743 Prot	21
Rice C72616	S	A	P	74
At Hyp 2245035	9
KIA00160	N	G	P	600

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Figure 8a continued

VRN2 Ler	A V V P A	T K T R K L S	A E R S	E A R S	260
AI163743 Prot	A M L Q F F	A G K K L S	S S S	D M N	40
Rice C72616	T V L Q Q	K K L S	R R A	P R N	93
At Hyp 2245035	A K V P A	. . . S E D	K R S	A T S	21
KIA00160	K A S M S	. F L E S	E V E	Q R T	620
VRN2 Ler	H L : L L Q	K R R Q F F Y	H R R A	Q P M	279
AI163743 Prot	R T : L L Q	R R R Q F F Y	H R R A	Q P M	59
Rice C72616	R Q Y : L L Q	R R R Q F F Y	H R R A	Q P M	112
At Hyp 2245035	H Y S : L L Q	R R R Q F F Y	H R R A	Q P M	41
KIA00160	H Y S : L L Q	R R R Q F F Y	H R R A	Q P M	639
VRN2 Ler	L E Q V M S	D R R D S E E	V D V	D D V	297
AI163743 Prot	A E Q V M S	D R R D S E E	V D V	D D V	77
Rice C72616	L G A V M S	D R R D S E E	V D V	D D V	130
At Hyp 2245035	L E Q V M S	D R R D S E E	V D V	D D V	61
KIA00160	P Q E M . .	E V D S E E	K D .	P E W	655
VRN2 Ler	A D F E E D	R R Q M L D	F V D V	N K D	316
AI163743 Prot	A D F E E D	R R Q M L D	F V D V	N K D	96
Rice C72616	A D F E E D	R R Q M L D	F V D V	N K D	149
At Hyp 2245035	A H L E E S	Q M L N G S	M D E N	E I V	81
KIA00160	L R E K T I	Q I E E F S	D V N E	G . E	674
VRN2 Ler	K Q F M H L	W N S F V R	K Q R V	I A D	336
AI163743 Prot	K Q F M H L	W N S F V R	K Q R V	I A D	108
Rice C72616	. L I M H M				154
At Hyp 2245035	E R F I K L	W N S F V K	Q Q R I	V A D	101
KIA00160	K E V M K L	W N L H V M	K H G F	I A D	694
VRN2 Ler	H I S W A C	E A F S R F	Y E K E	L H R	356
AI163743 Prot	H I S W A C	E A F S R F	Y E K E	L H R	108
Rice C72616	H I P W A C	E A F S R L	H L Q E	L R S	154
At Hyp 2245035	Q M N H A C	M L F V E N	Y G Q K	I K	121
KIA00160	Q M N H A C	M L F V E N	Y G Q K	I K	714

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Figure 8a continued

VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	S S L F W C W R L F L I K L W N H G L V	376 108 154 141 733
VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	L S L D L C W R Q F M I K Q W D Y G L L . N L C R N F M L H L V S M H D F N L I	154 141 733
VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	D S A T I N N C N T I L E N C R N S S D	396 108 154 161 753
VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	D R V T M N K C N T I I Y H N I S T T N S I M S I D K A V T K L R E M Q Q K L E	416 108 154 181 773
VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	T T T T N N N N S V D R P S D S N T N N	436 108 154 186 793
VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	D D I N N N N T R T T D N M D V V D D D K G E S A S P A N E E I T E E Q N G T A	445 108 154 186 803
VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	N N I V D H P N D I N N K N N V D N K D	
VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	I N R D K N G F S E I N S K E K A L E T D S V S G	
VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	N N S R D K V I K	
VRN2 Ler At163743 Prot Rice C72616 At Hyp 2245035 KIA00160	V S K Q S K K Q K L	

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111
57
85
69
59
65
29
244
82
832
100
269
510
366
590
2734
535
535
891
420
405
271

Case	Age	Sex	Site	Pathologic	Survival
1	65	M	Rectum	Adenocarcinoma	10 years
2	68	M	Rectum	Adenocarcinoma	12 years
3	72	M	Rectum	Adenocarcinoma	15 years
4	75	M	Rectum	Adenocarcinoma	18 years
5	78	M	Rectum	Adenocarcinoma	20 years
6	80	M	Rectum	Adenocarcinoma	22 years
7	82	M	Rectum	Adenocarcinoma	25 years
8	85	M	Rectum	Adenocarcinoma	28 years
9	88	M	Rectum	Adenocarcinoma	30 years
10	90	M	Rectum	Adenocarcinoma	32 years
11	92	M	Rectum	Adenocarcinoma	35 years
12	95	M	Rectum	Adenocarcinoma	38 years
13	98	M	Rectum	Adenocarcinoma	40 years
14	100	M	Rectum	Adenocarcinoma	42 years
15	102	M	Rectum	Adenocarcinoma	45 years
16	105	M	Rectum	Adenocarcinoma	48 years
17	108	M	Rectum	Adenocarcinoma	50 years
18	110	M	Rectum	Adenocarcinoma	52 years
19	112	M	Rectum	Adenocarcinoma	55 years
20	115	M	Rectum	Adenocarcinoma	58 years
21	118	M	Rectum	Adenocarcinoma	60 years
22	120	M	Rectum	Adenocarcinoma	62 years
23	122	M	Rectum	Adenocarcinoma	65 years
24	125	M	Rectum	Adenocarcinoma	68 years
25	128	M	Rectum	Adenocarcinoma	70 years
26	130	M	Rectum	Adenocarcinoma	72 years
27	132	M	Rectum	Adenocarcinoma	75 years
28	135	M	Rectum	Adenocarcinoma	78 years
29	138	M	Rectum	Adenocarcinoma	80 years
30	140	M	Rectum	Adenocarcinoma	82 years
31	142	M	Rectum	Adenocarcinoma	85 years
32	145	M	Rectum	Adenocarcinoma	88 years
33	148	M	Rectum	Adenocarcinoma	90 years
34	150	M	Rectum	Adenocarcinoma	92 years
35	152	M	Rectum	Adenocarcinoma	95 years
36	155	M	Rectum	Adenocarcinoma	98 years
37	158	M	Rectum	Adenocarcinoma	100 years
38	160	M	Rectum	Adenocarcinoma	102 years
39	162	M	Rectum	Adenocarcinoma	105 years
40	165	M	Rectum	Adenocarcinoma	108 years
41	168	M	Rectum	Adenocarcinoma	110 years
42	170	M	Rectum	Adenocarcinoma	112 years
43	172	M	Rectum	Adenocarcinoma	115 years
44	175	M	Rectum	Adenocarcinoma	118 years
45	178	M	Rectum	Adenocarcinoma	120 years
46	180	M	Rectum	Adenocarcinoma	122 years
47	182	M	Rectum	Adenocarcinoma	125 years
48	185	M	Rectum	Adenocarcinoma	128 years
49	188	M	Rectum	Adenocarcinoma	130 years
50	190	M	Rectum	Adenocarcinoma	132 years
51	192	M	Rectum	Adenocarcinoma	135 years
52	195	M	Rectum	Adenocarcinoma	138 years
53	198	M	Rectum	Adenocarcinoma	140 years
54	200	M	Rectum	Adenocarcinoma	142 years
55	202	M	Rectum	Adenocarcinoma	145 years
56	205	M	Rectum	Adenocarcinoma	148 years
57	208	M	Rectum	Adenocarcinoma	150 years
58	210	M	Rectum	Adenocarcinoma	152 years
59	212	M	Rectum	Adenocarcinoma	155 years
60	215	M	Rectum	Adenocarcinoma	158 years
61	218	M	Rectum	Adenocarcinoma	160 years
62	220	M	Rectum	Adenocarcinoma	162 years
63	222	M	Rectum	Adenocarcinoma	165 years
64	225	M	Rectum	Adenocarcinoma	168 years
65	228	M	Rectum	Adenocarcinoma	170 years
66	230	M	Rectum	Adenocarcinoma	172 years
67	232	M	Rectum	Adenocarcinoma	175 years
68	235	M	Rectum	Adenocarcinoma	178 years
69					

[illegible]

Figure 8b

VRN2 Ler
 AI Di19 S51478
 AI Di19 S51478
 AI SUP U38946
 AI Hyp 2191171
 AI Hyp 3377806
 Sc Pep7 91500
 Sc TFI1A 730931
 Sp Hyp 1351713
 Ce Hyp 255942
 Ce Hyp 2854197
 Ce Hyp 304459
 Dm BRCORE-NS-Z3
 Dm GAGA 729556
 Dm ken 3550814
 Hs ATBF-1 976347
 Hs Hs KIA00160
 Hs ZNF142 3123312
 Mm FOG 2252814
 Mm Spalt1 1296845
 Rn Roaz 2149792
 Xm ZF1 532083